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SPECIFICATION FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

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SPECIFICATION FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

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Indian Standard

SPECIFICATION FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 29 January 1979, after the draft finalized by the Nutrition Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Reconstitutable protein beverage powders are based essentially on vegetable protein materials like isolates and concentrates and are so designed that, when added to hot or cold water or milk, they readily disperse and give a food beverage of good nutritional value. This beverage can be consumed as such or as an adjunct to tea, coffee, cocoa, etc.

0.2.1 The beverage is prepared by blending ingredients, such as protein isolate or other protein-rich materials, milk powders, malt extract, cocoa, sugar, liquid glucose, edible fats and oils, vitamins, minerals, food additives including emulsifiers, stabilizers and flavours, followed by suitable drying to a homogeneous material.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for reconstitutable protein beverage foods.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Routine Test — Tests carried out on each lot to check the essential requirements that are likely to vary during production.

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*Rules for rounding off numerical values (*revised*).

2.2 Type Tests — Tests carried out to approve the design and micronutrient quality of the product at least at the beginning of marketing or certification, and conducted periodically thereafter to check the product quality or whenever the basic formulation is changed.

2.3 Acceptance Tests — Tests carried out on samples selected from the lot for the purposes of acceptance of the lot.

3. INGREDIENTS

3.1 The following materials may be used in the preparation of reconstitutable protein beverage foods.

3.1.1 *Protein Isolates — See* IS:8211-1976[1] and IS:8212-1976[2].

3.1.2 *Edible Oilseed Flours — See* IS:4684-1975[3], IS:4874-1968[4], IS:4875-1975[5], IS:4876-1968[6], IS:6108-1971[7], IS:6109-1971[8], IS:7835-1975[9], IS:7836-1975[10] and IS:7837-1975[11].

3.1.3 *Malt Extract — See* IS:2404-1972[12].

3.1.4 *Liquid Glucose — See* IS:873-1974[13].

3.1.5 *Sugar — See* IS:1151-1969[14] and IS:498-1970[15].

3.1.6 *Edible Fats and Oils* — Ghee or butter or vegetable oils or hydrogenated vegetable fat (Vanaspati).

3.1.7 *Milk Powder, Whole and Skim — See* IS:1165-1975[16].

3.1.8 *Food Additives* — Including emulsifiers and stabilizers, permitted in the Prevention of Food Adulteration Rules, 1954.

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[1] Specification for edible soya protein isolate.

[2] Specification for edible groundnut protein isolate.

[3] Specification for edible groundnut flour (expeller pressed) (*first revision*).

[4] Specification for edible cottonseed flour (expeller pressed) (*first revision*).

[5] Specification for edible groundnut flour (solvent extracted) (*first revision*).

[6] Specification for edible cottonseed flour (solvent extracted) (*first revision*).

[7] Specification for edible sesame flour (solvent extracted).

[8] Specification for edible sesame flour (expeller pressed).

[9] Specification for edible low-fat soya flour

[10] Specification for medium-fat soya flour.

[11] Specification for edible full-fat soya flour.

[12] Specification for malt extract (*first revision*).

[13] Specification for liquid glucose (*first revision*).

[14] Specification for refined sugar (*first revision*).

[15] Grading for vacuum pan sugar (plantation white) (*third revision*).

[16] Specification for milk-powder (*second revision*).

4. REQUIREMENTS

4.1 Description — Reconstitutable protein beverage food shall be in the form of powder/pellets/tablets. It shall have a pleasant flavour. When added to cold or hot milk or water, the food shall be dispersible without lumping to give an acceptable beverage. It shall be free from extraneous impurities and harmful ingredients. The energy level of the food shall be at least 420 cal/100 g of the material.

4.2 Reconstitutable protein beverage foods shall be manufactured under hygienic conditions (*see* IS:2491-1973*).

4.3 The material shall also comply with the requirements given in Tables 1 and 2.

TABLE 1 REQUIREMENTS FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

[*Clauses* 4.3, 7.2(b) *and* 7.4]

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, *Max*	6	Appendix A of IS:1547-1968*
ii)	Protein, percent by mass, *Min*	20	IS:7219-1973†
iii)	Fat (on dry basis), percent by mass, *Min*	9	Appendix F of IS:4684-1975‡
iv)	Carbohydrate, percent by mass, *Min*	65	Appendix D of IS:1547-1968*
v)	Solubility, percent by mass, *Min*	85	Appendix M of IS:1547-1968*
vi)	Acid-insoluble ash, percent by mass, *Max*	0·3	Appendix F of IS:1547-1968*
vii)	Total ash, percent by mass, *Max*	5	Appendix E of IS:1547-1968*

*Specification for infant milk foods (*first revision*).

†Method for determination of protein in foods and feeds.

‡Specification for edible groundnut flour (expeller pressed) (*first revision*).

4.4 Microbiological Limits — Reconstitutable protein beverage food shall be tested periodically to comply with the requirements given in Table 3.

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*Code for hygienic conditions for food processing units (*first revision*).

TABLE 2 REQUIREMENTS OF VITAMINS AND MINERALS FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

[*Clauses* 4.3, 7.1(a) *and* 7.4]

SL No.	CHARACTERISTIC	REQUIREMENTS	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Calcium, mg/100 g, *Min*	250	Appendix F of IS:1656-1969*
ii)	Phosphorus, mg/100 g, *Min*	300	Appendix D of IS:5055-1969†
iii)	Vitamin A, μg/100 g, *Min*	300	IS:5886-1970‡
iv)	Thiamine, mg/100 g, *Min*	0·3	IS:5398-1969§
v)	Riboflavin, mg/100 g, *Min*	0·3	IS:5399-1969‖
vi)	Niacin, mg/100 g, *Min*	3	IS:5400-1969¶
vii)	Iron, mg/100 g, *Min*	5	Appendix F of IS:1656-1969*

*Specification for processed cereals weaning foods (*first revision*).

†Specification for lecithin food grade.

‡Methods for estimation of carotenes and vitamin A (retinol) in foodstuffs.

§Methods for estimation of thiamine (vitamin B_1) in foodstuffs.

‖Methods for estimation of riboflavin (vitamin B_2) in foodstuffs.

¶Methods for estimation of nicotinic acid (niacin) in foodstuffs.

TABLE 3 MICROBIOLOGICAL REQUIREMENTS FOR RECONSTITUTABLE PROTEIN BEVERAGE FOOD

[*Clauses* 4.4, 7.1(b) *and* 7.4]

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Total bacterial count per g, *Max*	50 000	IS:5402-1969*
ii)	Coliform bacterial count per g, *Max*	10	IS:5401-1969†
iii)	*Salmonella* sp.	Nil	IS:5887 (Part III)-1976‡

*Methods for plate count of bacteria in foodstuffs.

†Methods for detection and estimation of coliform bacteria in foodstuffs.

‡Methods for deduction of bacteria responsible for food poisoning: Part III Isolation and identification of *Salmonella* and *Shigilla* (*first revision*).

5. PACKING AND MARKING

5.1 Packing — Reconstitutable protein beverage food may be packed in acceptable quantity in either tinplate containers or glass bottles and hermetically sealed.

5.2 Marking — Each container may be suitably marked so as to give the following information:

a) Name of the material;

b) Name and address of the manufacturer;

c) Batch or code number;

d) Net mass;

e) Month of manufacture;

f) Calories/100 g of the material;

g) Names of the ingredients used, in descending order of composition; and

h) Any other details required under the Standards of Weights and Measures (Packaged Commodities) Rules, 1977.

5.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

6. SAMPLING

6.1 The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in Appendix A of IS : 3137-1974*.

7. TESTS

7.1 Type Tests — The following characteristics shall be tested for type approval:

a) Vitamin and minerals (Table 2), and

b) Microbiological limits (Table 3).

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*Specification for high-protein mixes for use as food supplements (*first revision*).

7.2 Routine Test — The following characteristics shall be tested to check the essential requirements likely to vary during production:

a) Description (**4.1**), and

b) Composition (Table 1).

7.3 Acceptance Tests — For acceptance of lot, the material shall be tested for routine tests (**7.2**).

7.4 Tests shall be carried out as prescribed in **4.1** and in Tables 1, 2 and 3.

7.5 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS: 1070-1977*) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

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*Specification for water for general laboratory use (*second revision*).

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INDIAN STANDARDS ON NUTRITION

IS:	
3137-1974	Specification for high protein mixes for use as food supplement (*first revision*)
4684-1975	Specification for edible groundnut flour (expeller pressed) (*first revision*)
4874-1968	Specification for cottonseed flour (expeller pressed) (*first revision*)
4875-1975	Specification for edible groundnut flour (solvent extracted) (*first revision*)
4876-1968	Specification for cottonseed flour (solvent extracted) (*first revision*)
6108-1971	Specification for edible sesame flour (solvent extracted)
6109-1971	Specification for edible sesame flour (expeller pressed)
7021-1973	Specification for protein rich foods supplements for infants and preschool children
7481-1974	Method for determination of protein efficiency ratio (PER)
7482-1974	Specification for protein-based beverages
7487-1974	Specification for protein rich biscuits
7835-1975	Specification for edible low-fat soya flour
7836-1975	Specification for edible medium-fat soya flour
7837-1975	Specification for edible full-fat soya flour
8211-1976	Specification for edible soya protein isolate
8212-1976	Specification for edible groundnut protein isolate
8220-1976	Specification for protein rich concentrated nutrient supplementary foods
8222-1976	Specification for edible leaf protein concentrate
8664-1977	Specification for edible coconut flour (expeller pressed)
8665-1977	Specification for protein fortified bread
8676-1977	Specification for edible coconut flour (solvent extracted)
8677-1977	Specification for edible sunflower flour (solvent extracted)
8678-1977	Specification for vegetable protein-based yoghurt (vegetable curds)